

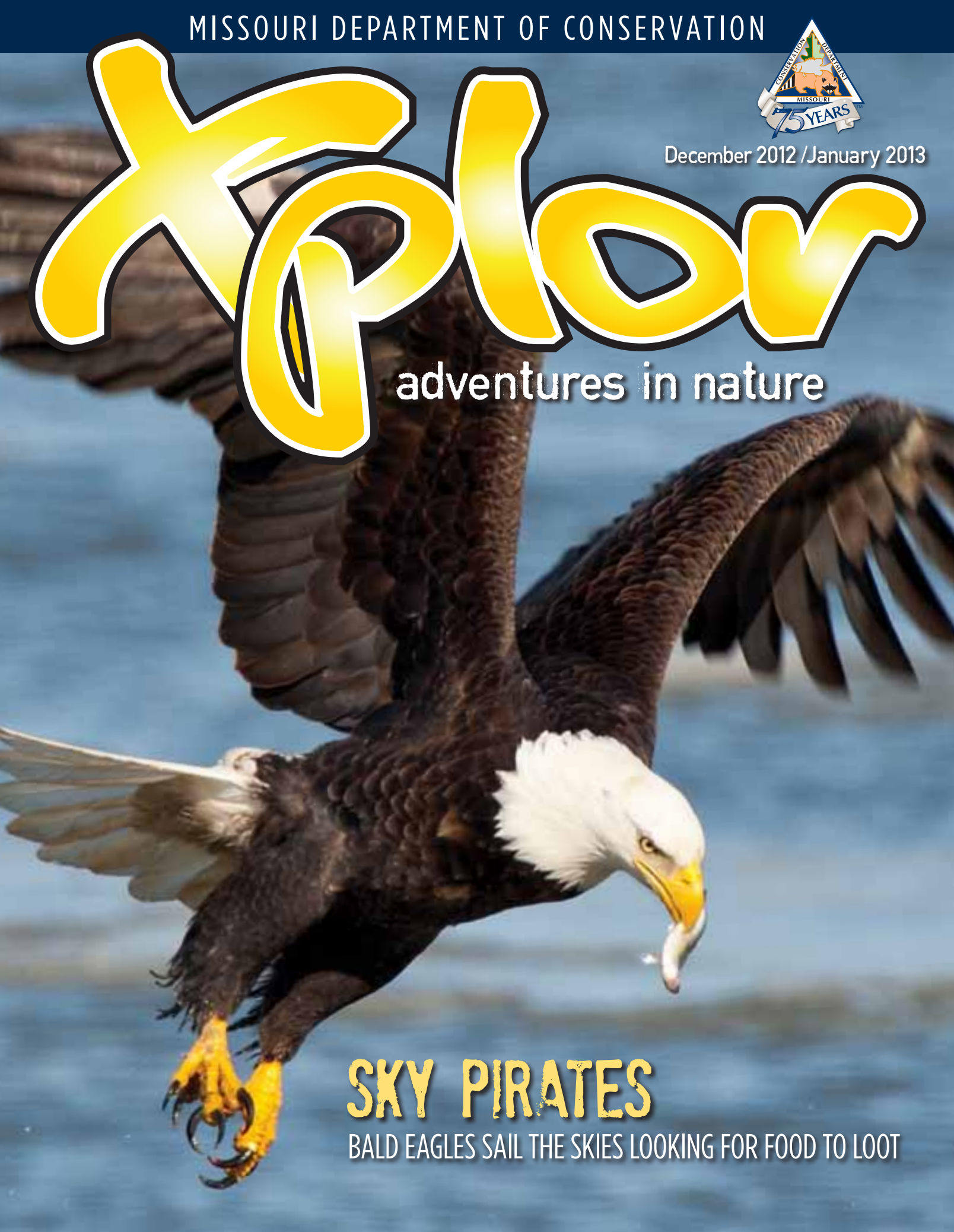
MISSOURI DEPARTMENT OF CONSERVATION



December 2012 / January 2013

# Xplor

adventures in nature



## SKY PIRATES

BALD EAGLES SAIL THE SKIES LOOKING FOR FOOD TO LOOT

# COVER STORIES



Cave salamander

## ON THE COVER



BALD EAGLE  
by Noppadol Paothong

**6 Animal Wrappers**  
What covers a critter does many important things.

**10 Sky Pirates**  
Bald eagles sail the skies, looking for loot.

## DEPARTMENTS

- 1 What Is It?
- 2 You Discover
- 4 Predator vs. Prey
- 5 How To
- 14 Wild Jobs
- 15 Strange But True
- 16 Xplor More



Eastern  
red cedar



**GOVERNOR**  
Jeremiah W. "Jay" Nixon

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### XPLOR STAFF

David Besenger  
Les Fortenberry  
Karen Hudson  
Regina Knauer  
Noppadol Paothong  
Marc Porter  
Mark Raithe  
Laura Scheuler  
Matt Seek  
Tim Smith  
David Stonner  
Nichole LeClair Terrill  
Stephanie Thurber  
Cliff White

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## ON THE WEB

Visit [xplormo.org](http://xplormo.org) for cool videos, sounds, photos, fun facts and more!



# WHAT IS IT?

**DON'T KNOW?**

Jump to Page 16 to find out.



- ❶ I'm a big, mean grazing machine.
- ❷ I'm fast and *furry*-ious.

- ❸ Every day is hump day for me.
- ❹ Years ago there were more of me.



# you discover



Raccoon



Short-eared owl

Don't stay inside when the snow gets to blowing. Go out. You'll discover nature coming and going. Here are some fun things to do in December and January.

## GO ON A SONIC SCAVENGER HUNT.

Take advantage of the longest night of the year, December 21, and hike a trail after dark. You're not likely to see much, but that's okay. On this hike, you're trying to collect sounds, not sights. See if you can hear coyotes howling, owls hooting, geese honking, and raccoons chattering. For a checklist of noisy nocturnal critters and a sampling of their sounds, check out [xplormo.org/node/19485](http://xplormo.org/node/19485).



Coyote

## Build an OBSTACLE COURSE.

Need a cure for cabin fever? Then bundle up, head outside, gather some friends, and build an obstacle course in the woods. Use a fallen log for a balance beam. Zigzag between small trees or run circles around big ones. Do pull-ups on sturdy branches or limbo under low-hanging limbs. Chart a course, mark the start and finish lines, then use a stopwatch to see who can complete the course the fastest.

## Don't miss the chance to Discover Nature at

Learn how animals weather winter at **SURVIVOR: WINTER EDITION.**

Conservation Department  
Northeast Regional Office,  
Kirksville; December 19, 1–2 p.m.  
For info, call 660-785-2420.

Chase beagles and bunnies during **RABBIT SEASON.**

Statewide  
October 1, 2012 to  
February 15, 2013  
For info, visit [mdc.mo.gov/node/10814](http://mdc.mo.gov/node/10814).

Walk a moonlit path on a **NIGHT HIKE.**

August A. Busch Memorial  
Conservation Area  
December 22, 6–9 p.m.  
Register at 636-441-4554.



Prairie vole







## Make EDIBLE ORNAMENTS.

We can't promise a partridge in a pear tree, but if you want chickadees, blue jays, and woodpeckers, decorate an evergreen with edible ornaments. Get some suet (look for it in stores that sell birdseed) and leave it in a warm, sunny spot. Once the suet's soft, use cookie cutters to trim it into holiday-themed shapes, such as stars, bells, or gingerbread people. Unfold paperclips to make hooks, and push one into each piece of suet. Chill the suet in the freezer until it's hard, then hang your bird baubles on a tree.

## Cook your goose.



Canada goose

Forget turkey. Go wild and serve goose at your holiday dinner. You can hunt white-fronted, snow, Ross's, and Canada geese throughout December and January at Conservation

Department wetland areas across the state. If you're new to goose hunting, the best way to harvest a honker is to ask an experienced hunter to take you under his or her wing. For places to hunt and rules to follow, flock to [mdc.mo.gov/node/303](http://mdc.mo.gov/node/303).

## Go NUTS for SQUIRRELS.

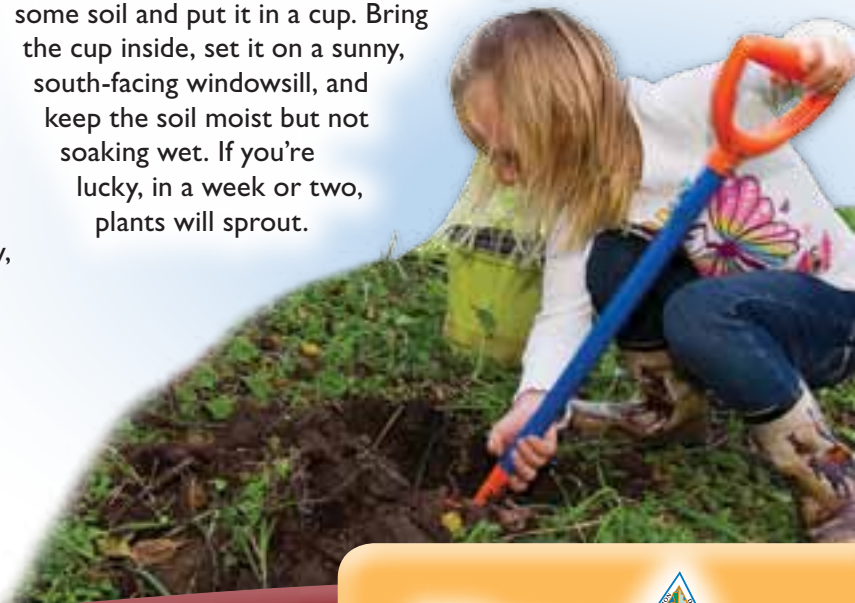
January 21 is National Squirrel Appreciation Day. Here's how to show some love to all your nut-munching, tree-hugging, furry-tailed friends: Loop wire through an eye-screw, tie the wire around the branch of a tree, and twist an ear of dried corn onto the screw. Squirrels will appreciate the free meal, and you'll love watching their corny hijinks.



Gray squirrel

## Grow mystery plants.

Some seeds can survive being buried for decades, and others can live underground even longer. Lambs quarter will sprout after being buried for 1,600 years! To learn what mysteries lurk in your backyard, dig up some soil and put it in a cup. Bring the cup inside, set it on a sunny, south-facing windowsill, and keep the soil moist but not soaking wet. If you're lucky, in a week or two, plants will sprout.



## these fun events.

Find treasures in the snow while  
**WINTER GEOCACHING.**

Burr Oak Woods Conservation  
Nature Center, Blue Springs  
December 22,  
10 a.m.—noon  
Register at  
816-228-3766.

Learn what an owl ate for  
supper by **DISSECTING  
OWL PELLETS.**

Cape Girardeau Conservation  
Nature Center  
January 12, 10–11:30 a.m.  
Ages 7–11; Register  
at 573-290-5218.

Owl  
pellet



Looking for more ways to  
have fun outside? Find out  
about Discover Nature  
programs in your area at  
[xplormo.org/node/2616](http://xplormo.org/node/2616).



# PREDATOR VS. PREY

The struggle to survive isn't always a fair fight. Here's what separates nature's winners from its losers.

Illustration by David Besenger

Red fox

## Superhero Hearing

A fox's oversized ears can pinpoint a vole rustling under the snow from 100 feet away—about the length of a basketball court!

## Lethal Leap

A fox can leap the length of a living room to pounce paws-first upon an unsuspecting vole.

Prairie vole

## Hair Snare

Even when it can't see squat, a fox's super-sensitive whiskers guide its teeth to snap up a squirming vole.

## Strength in Numbers

More than 400 voles may live in a space the size of a football field. With so many morsels scurrying around, each vole has better odds of not being munched.

## Road-Building Rodents

Voles build a maze of tunnels through the grass, snow, and soil to disappear into when a hungry fox comes calling.

**AND THE WINNER IS...**

Voles are like walking cheeseburgers, and nearly every predator in Missouri will snack on one if given the chance. Red foxes are no exception, and this particular rodent has run its last maze.



## GATHER THESE SUPPLIES

- > **Optional:** Nuts, dried corn, and fruit (both fresh and dried)
- > **Sticks broken into 1-foot lengths**
- > **A Bundt cake pan**
- > **A pitcher of water**
- > **Birdseed**
- > **Strong cord or ribbon**



1. Fill the cake pan halfway up with birdseed, nuts, dried corn, and fruit.
2. Place six to 12 sticks in the cake pan. Arrange each stick so one end is lying in the pan and the other is sticking out the side, like the rays of the sun. These will give birds something to perch on.
3. Bundle up, then carefully carry the cake pan to a cold, shady spot outside. Gently pour water into the cake pan until it's nearly full. (You may need to rearrange the sticks afterwards.)
4. Leave the cake pan outside overnight. The next morning, it should be frozen solid.
5. Carefully pop your wreath out of the pan. You may need to run the bottom of the pan under warm water to free the wreath. Use cord or ribbon to hang your wreath in a shady spot in a tree. Try to pick a place you can see from your house. In no time, birds will find your gift and their holiday feast will begin.

# How To

## Make a BIRDSEED WREATH

**W**hen the temperature dips below freezing, birds need extra energy to survive. Lend a hand to your feathered friends by making this easy birdseed wreath.





# Animal Wrappers

by Matt Seek

Painted bunting

**W**hether it's skin, scales, feathers, or fur, what covers a critter does many important things. For one, it protects an animal's clean, squishy insides (such as its heart and lungs) from sharp, dirty things outside. But that's not all an animal's wrapper can do. Read on to wrap your head around a few other animal wrapper roles.

## Courtship

Male painted buntings dress to impress. Like many boy birds, these fellas use their flashy feathers to charm the chicks. The bright colors also advertise to other buntings that a patch of habitat is occupied.



## Taste

Every inch of a catfish's skin, from its whiskery barbels to the tip of its tail, is blanketed with taste buds. But this *sense*-sational skin isn't made to savor flavors. Its purpose is to help catfish nab snacks in dark, murky water.

Flathead catfish

## Warning

Bold patterns, such as the yellow and black bands on a bee or the white stripes on a skunk, are nature's way of saying, "Back off, or face the consequences." This clearwing moth can't sting, but that doesn't keep it from doing its best bumblebee imitation.

Clearwing moth

## Warmth

How does a river otter stay hotter than chilly water? It's very hairy. Each fingernail-sized patch of fur is packed with about 60,000 hairs! This dense coat keeps the otter toasty when it swims in icy streams or belly-slides down snowy banks.

River otter





Nine-banded armadillo

## Protection

Most mammals have lots of fur, but not armadillos. These cat-sized critters are covered from snout to tail with tough bony plates. Although armadillos look like walking motorcycle helmets, the armor protects them from pokey things such as thorns or teeth.

## Breathing

Cave salamanders don't just wear their skin, they breathe through it, too. These little amphibians don't have lungs like a person or gills like a fish. Instead, oxygen passes right through their moist, slimy skin into tiny blood vessels just underneath.



Cave salamander





## Camouflage

Timber rattlesnakes look fierce, but they're actually quite shy. To hide from predators and prey, the sneaky snakes coil quietly beside fallen logs and rely on their camouflaged scales to blend in with dead leaves.

Timber rattlesnake

Io moth caterpillar

## Defense

With lime-green skin and elegant pink stripes, io moth caterpillars look lovely. But don't be fooled by their bling, because these little wigglers can sting. Each of their frilly spines packs a poisonous punch that keeps predators from munching the slow-moving insects.

Collared lizard

## Moisture Conservation

The glades where collared lizards lurk are sunny, hot, and dry. So how does a lizard keep from becoming a crispy critter? They're wrapped in waterproof scales. The scales overlap like shingles on a roof. But unlike shingles, a lizard's outer layer keeps moisture in, not out.



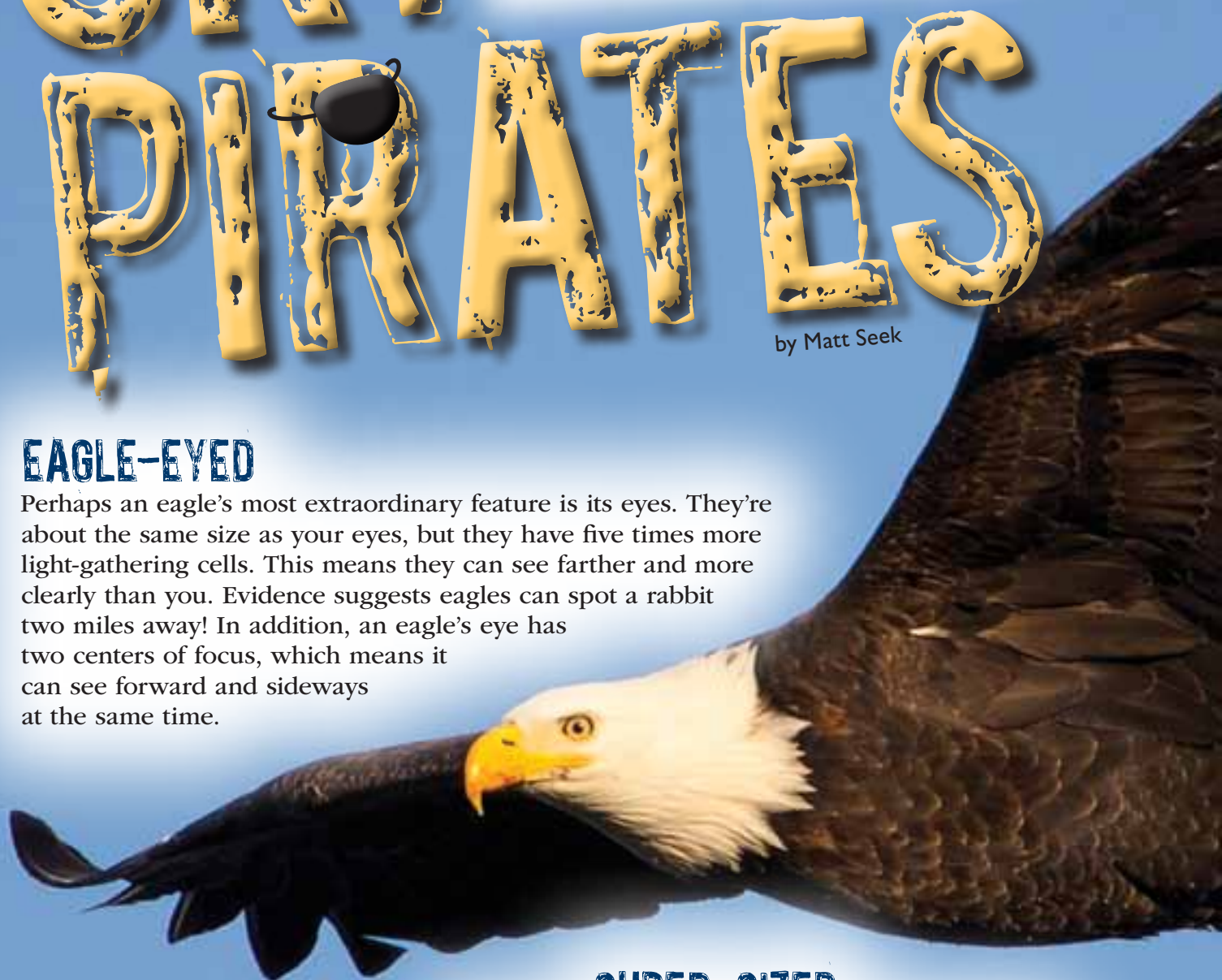
# SKY PIRATES

**B**ald eagles are big, rowdy birds that like big water. They plunder harbors, lakes, wetlands, and rivers looking for fish, and they're not above stealing from other animals—even people. Eagles live by their wits, stay on the move, and sail the skies, looking for loot. Read on to learn more about these swashbuckling birds.

by Matt Seek

## EAGLE-EYED

Perhaps an eagle's most extraordinary feature is its eyes. They're about the same size as your eyes, but they have five times more light-gathering cells. This means they can see farther and more clearly than you. Evidence suggests eagles can spot a rabbit two miles away! In addition, an eagle's eye has two centers of focus, which means it can see forward and sideways at the same time.



## SUPER-SIZED

Bald eagles are large and in charge. They're about as tall as your 3-year-old brother, they weigh more than a jug of milk, and their wings stretch farther than the height of your front door. Among America's birds of prey, only California condors are bigger.





## ONE TALON-TEDED BIRD

Never shake hands with an eagle. Their talons are needle-sharp, and their grip is strong enough to drive nails through concrete. Eagles are also equipped with hooked, razor-edged beaks that are perfect for ripping flesh from fish or geese.

Noppadol Paithong

Jim Rathert



Jim Rathert



## FOOD LOOTERS

Bald eagles aren't picky eaters. Fish make up most of their diet, but they won't turn their beaks up at geese, rabbits, or whatever meat they can find—even if it's been dead for a bit. And, eagles aren't shy about stealing food. They often swipe meals from other animals—even eagles—and have been known to snatch fish from anglers and ducks from hunters. As a last resort, eagles hunt for themselves, swooping down to pluck fish from the water or pin injured geese to the ground.



## TREE HOUSES? NO, TREE MANSIONS.

Newlywed eagles build relatively small nests. But each year, the couple adds more sticks to the old structure. After several years, the nest becomes ginormous. A nest in Florida measured 10 feet across and 20 feet deep. One in Ohio was used for 34 years until the tree it was in blew down. That nest weighed more than a minivan!

Eagle researcher



Jim Rathert

## EAGLE BABIES

Mama eagles lay two (sometimes three) eggs in March or April. When the babies hatch about 35 days later, they're covered with fuzzy gray down. Mom and pop tag-team hunting for and feeding the nestlings. To keep the nest tidy, young eagles poop over the side, leaving a spray of whitewash on vegetation below. Although they grow flight feathers in a few weeks, it takes five years for young eagles to obtain the white heads and tails of adults.



(c) F. Truistow/WIREO

## BON VOYAGE

Nestlings practice flying by flapping their wings and hopping from one side of the nest to the other or to nearby limbs. This builds strength, balance, and—most importantly—the ability to land without crashing. After 12 weeks of being nest-bound, young eagles take off on their first flight. Their parents feed them for a few more weeks, but after that, the young pirates are on their own, sailing the skies, eagle-eyed, looking for food to loot.



Jim Rathert





## TAKING THE PLUNGE

To impress their mates, eagles perform spectacular courtship displays. Eagle couples fly high into the air, lock their talons, and cartwheel toward the ground. Just before they splat, the lovebirds let go and swoop up into the sky. Eagles perform this daring display every year even though they stick with the same mate for life.

## SHOW-ME EAGLES

When northern lakes and rivers freeze, eagles migrate south to find food. Missouri is one of America's hottest eagle hangouts, with nearly 4,000 eagles spending winter here. Many arrive in December and gather in noisy flocks near large bodies of water. Most eagles return north in the spring, but about 500 live in Missouri year-round.



# EAGLE DAYS

### Squaw Creek National Wildlife Refuge

Near Mound City  
December 1-2, 9 a.m. to 4 p.m.

### Smithville Lake

Little Platte Park Course  
Complex, Smithville  
January 5, 9:30 a.m. to 4 p.m.  
January 6, 11 a.m. to 4 p.m.

**Clarksville**, Lock and Dam 24 and the Apple Shed Theater in Clarksville  
January 26, 9 a.m. to 4 p.m.  
January 27, 10 a.m. to 3 p.m.

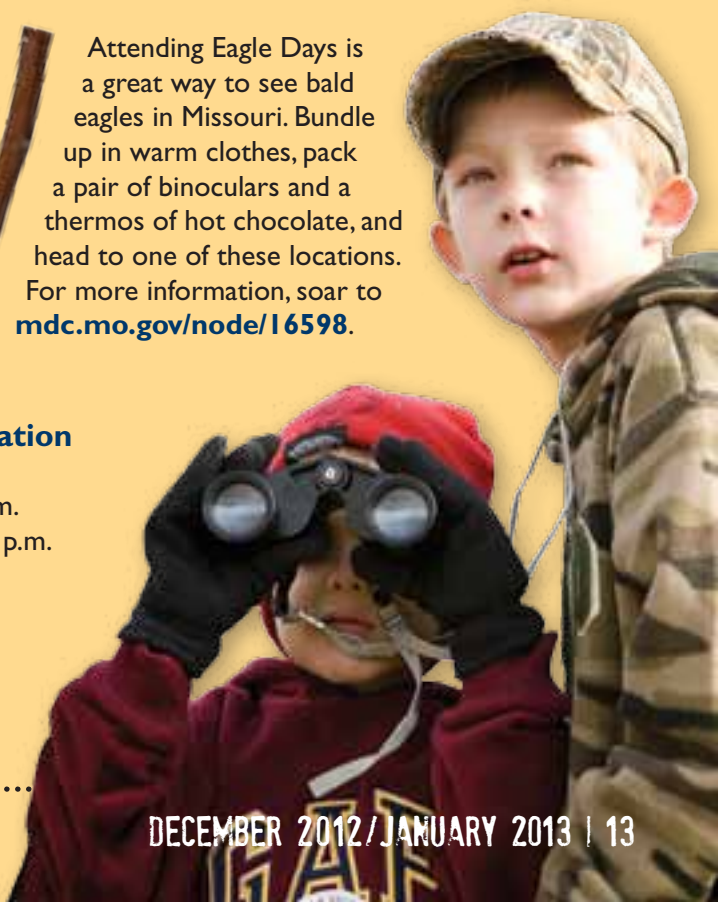
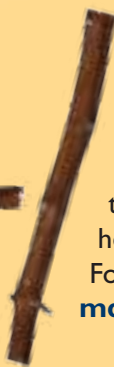
### Springfield Conservation Nature Center

January 26, 9 a.m. to 4 p.m.  
January 27, 12:30 to 4:30 p.m.

### Mingo National Wildlife Refuge

Near Puxico  
February 2,  
9 a.m. to 4 p.m.

Attending Eagle Days is a great way to see bald eagles in Missouri. Bundle up in warm clothes, pack a pair of binoculars and a thermos of hot chocolate, and head to one of these locations. For more information, soar to [mdc.mo.gov/node/16598](http://mdc.mo.gov/node/16598).





# WILD JOBS

SOMETHING FISHY HAPPENS  
WHEN HATCHERY WORKER  
JOSH GORMAN  
ROLLS INTO TOWN.



**Q: WHAT DOES A HATCHERY WORKER DO?**

**A:** We grow fish. I work at Montauk Hatchery near Salem. We raise rainbow trout there. When the fish grow about a foot long, we load them into a special truck and deliver them to rivers and lakes.

**Q: HOW MANY FISH DOES YOUR TRUCK HOLD?**

**A:** About 4,000 fish and 1,600 gallons of water.

**Q: WOW! THAT'S A TON OF FISH.**

**A:** Literally. The water and fish weigh about 16,000 pounds. With all that weight sloshing around, you can't drive the truck like a race car. You have to drive slowly and carefully.

**Q: HAVE YOU EVER GOTTEN STUCK?**

**A:** Once, at Busch Conservation Area in St. Louis. We were fully loaded, too. We tried pulling the truck out with a tractor but got stuck worse. A wrecker had to winch us out. It took three hours, but nearly all the fish survived.

**Q: HOW MANY FISH DO YOU DELIVER IN A YEAR?**

**A:** More than 350,000. We stock Montauk State Park, several Ozark rivers, and a bunch of lakes in St. Louis

**Q: HOW DID YOU BECOME A HATCHERY WORKER?**

**A:** I grew up fishing Montauk with my grandpa. When a job opened at the hatchery, I went for it.

**Q: ANY INSIDER TIPS FOR CATCHING A MONTAUK-RAISED TROUT?**

**A:** Use skinny, lightweight line. Our fish have sharp eyes.

Rainbow trout



# STRANGE, but TRUE!

YOUR GUIDE TO ALL THE  
**UNUSUAL, UNIQUE,**  
AND **UNBELIEVABLE**  
STUFF THAT GOES ON IN NATURE

Hoo's  
who? Female

**GREAT HORNED OWLS**  
are noticeably larger than males,  
but males have deeper voices. In  
all other respects, the owls look  
identical—at least to humans.  
Owls themselves have no problem  
telling each other apart.



Missouri's oldest living trees  
are **EASTERN RED  
CEDARS** growing atop  
bluffs in untouched corners  
of the state. Some are nearly  
900 years old, which means  
they started growing more  
than 600 years before the  
United States became a country.



Quick-change artists: In northern  
parts of their range, **LEAST  
WEASELS** trade their brown  
summer coats for white winter fur.  
This helps the feisty little predators  
slink through snow to catch  
mice and other prey cold.



Although they're Missouri's largest meat-  
eating mammal, **BLACK BEARS**  
give birth to itty-bitty babies. Born  
while mama bear's in her winter den,  
each cub is 9 inches long and weighs  
about 6 ounces—much smaller  
than an average human baby.



**OPPOSSUMS** have a few extra parts.  
Not only are they North America's  
only furbearer with a pouch, they  
also have more teeth—50 to  
be exact—than any other  
Missouri mammal. Now  
that's quite a mouthful!



Using nothing but its teeth, a **BEAVER**  
can gnaw down a 5-inch-wide willow  
tree in under three minutes. Big trees  
don't stop these furry chainsaws,  
either. A beaver in Canada  
cut down a cottonwood  
that was nearly 6 feet  
wide and 110 feet tall.



On average, a **SNOW GOOSE**  
goes to the bathroom every  
four minutes. With  
more than  
5 million  
snow geese in  
existence, these  
super poopers leave  
tons of droppings.



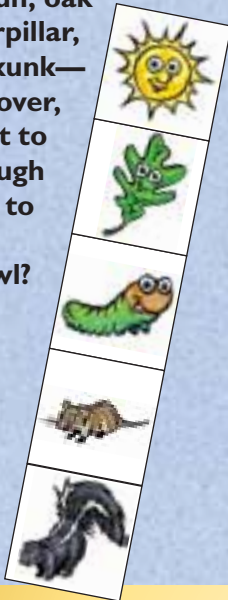
# XPLOR MOR

## Food Chain Fun



Plants are food factories, using sunlight, air, and water to make roots, shoots, and leaves. Many animals eat plants, and these animals often get chomped by still other animals. Biologists use food chains to show what eats what.

This owl would love to munch a skunk, but the food chain hasn't yet reached his belly. Can you follow the sequence below—sun, oak leaf, caterpillar, mouse, skunk—over and over, from start to end, through the maze to reach the hungry owl?



START							END
 1	 2	 3	 4	 5	 6	 7	
 8	 9	 10	 11	 12	 13	 14	
 15	 16	 17	 18	 19	 20	 21	
 22	 23	 24	 25	 26	 27	 28	
 29	 30	 31	 32	 33	 34	 35	
 36	 37	 38	 39	 40	 41	 42	
 43	 44	 45	 46	 47	 48	 49	

ANSWER TO

## WHAT IS IT?

FROM  
PAGE 1

keep bison warm in winter, and humps of muscle hold up their massive heads. More than 30 million bison once grazed the Great Plains. Today, fewer than 20,000 wild bison exist. A small herd roams Prairie State Park near Lamar.

American bison are North America's largest land animal. Although some weigh 2,000 pounds or more, bison can run 40 mph. To get big, bison eat 25 pounds of grass a day. Shaggy coats





## MIXED-UP MENU

**Whoops!** Nature served the wrong meal to these hungry animals. Can you connect each diner (labeled with a letter) to what it should eat for dinner (labeled with a number)?

**A**  
Mountain Lion



**1** Columbine

**B**  
Ruby-Throated Hummingbird



**2** Deer Mouse

Bluegill **3**



Fox Squirrel **C**

Largemouth Bass **D**



Acorn **4**



**5** White-Tailed Deer



**E** Black Ratsnake



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FREE TO MISSOURI HOUSEHOLDS

## CRITTER CORNER

### Cottontail Rabbit



Waste not, want not. As food moves through a cottontail, helpful bacteria living in its intestines turn tough plant fibers into nutrients. Unfortunately, the rabbit can't use some of these nutrients unless the food makes a return trip to its tummy. To hop this biological hurdle, cottontails eat their own droppings. Remember this the next time you start to complain about having leftovers for supper.